Claims

1. An encapsulated chip assembly comprising:

a baseplate (12),

a chip (10) attached to the baseplate in such a way that its contact surfaces (20) face away from the baseplate (12),

a layer (14) of a conductive material applied to the baseplate (12) and arranged to around the chip (10), and which is at least as high as the chip (10),

a cover plate (16) arranged on the layer of conductive material (14), whose one side, opposing the chip (10), being provided with one or more conductive surfaces (18), which are arranged in such a way that they form an electrical connection between the chip (10) and the layer of conductive material (14).

2. The encapsulated chip according to claim 1, whereby the chip (10) is surrounded by a filler material that fills the open space between the baseplate (12) and the cover plate (16).

3. The encapsulated chip according to claim 2, further comprising an electrically conductive glue, which is to establish both the electrical and the mechanical connections between the contact surfaces (20) of the chip (10) and the conductive surface (18) or the conductive surfaces (18), respectively, of the cover plate (16).

4. The encapsulated chip according to claim 2, further comprising an anisotropically conductive film (26) (ACF), which serves to establish both an electrical and a mechanical connection between the contact surfaces (20) of the chip (10) and the conductive surface (18) or the conductive surfaces (18), respectively, of the cover plate (16), and between the conductive surface (18) or the conductive surfaces (18), respectively, of the cover plate (16) and the conductive layer (14) applied to the baseplate (12).

5. The encapsulated chip according to claim 4, whereby the filler material consists of the anisotropically conductive film (26).

6. The encapsulated chip according to claim 1, where both the baseplate (12) and the cover plate (16) each consist of a flexible material.

7. The encapsulated chip according to claim1, where the height of the chip (10) is so low that it is rendered flexible.

8. The encapsulated chip according to claim 7, where the chip (10) consists mainly of silicon and has a thickness of less than 50 ìm.

9. The encapsulated chip according to claim 1, where the chip (10) comprises a transponder.

10. The encapsulated chip according to claim 9, where the conductive layer (14) comprises an aerial.

11. An encapsulated chip assembly for a smart label comprising:

a flexible baseplate (12),

a chip (10) having a transponder attached to the baseplate in such a way that its contact surfaces (20) face away from the baseplate (12),

a layer (14) of a conductive material applied to the baseplate (12) and arranged to around the chip (10), and which is at least as high as the chip (10) and forms an aerial for electrical signals for the transponder,

a cover plate (16) arranged on the layer of conductive material (14), whose one side, opposing the chip (10), being provided with one or more conductive surfaces (18), which are arranged in such a way that they form an electrical connection between the chip (10) and the layer of conductive material (14).

12. The encapsulated chip according to claim 11, further comprising an electrically conductive glue, which is to establish both the electrical and the mechanical connections

between the contact surfaces (20) of the chip (10) and the conductive surface (18) or the conductive surfaces (18), respectively, of the cover plate (16).

13. The encapsulated chip according to claim 12, further comprising an anisotropically conductive film (26) (ACF), which serves to establish both an electrical and a mechanical connection between the contact surfaces (20) of the chip (10) and the conductive surface (18) or the conductive surfaces (18), respectively, of the cover plate (16), and between the conductive surface (18) or the conductive surfaces (18), respectively, of the cover plate (16) and the conductive layer (14) applied to the baseplate (12).

14. The encapsulated chip according to claim 11, where the height of the chip (10) is so low that it is rendered flexible.

15. The encapsulated chip according to claim 14, where the chip (10) consists mainly of silicon and has a thickness of less than 50 μm.

16. Method for the manufacture of encapsulated chips, where the steps comprise:

the chip (10) is attached to a baseplate (12) in such a way that its contact surfaces (20) face away from the baseplate (12), and where a conductive layer (14) that serves to connect the chip (10) and is at least as high as the chip (10), is applied to the baseplate (12) to surround the chip (10),

a cover plate (16) is provided on whose one side one or more conductive surfaces (18) are arranged so that they can establish a connection between the chip (10) and the layer (14),

an anisotropically conductive film (26) is applied to the one side of the cover plate (16),

the cover plate (16) is aligned over the baseplate (12) so that the side with the conductive surface (18) or the conductive surfaces (18), respectively, is positioned over

the chip (10) so that a connection between the chip (10) and the layer (14) can be established,

the cover plate (16) is pressed onto the layer (14), under the application of heat, so that the anisotropically conductive film (26) establishes both a mechanical and an electrical connection between the contact surfaces (20) of the chip (10) and the conductive surface (18) or the conductive surfaces (18), respectively, of the cover plate (16), and that at the same time an electrical and a mechanical connection is established between the conductive surface (18) or the conductive surfaces (18), respectively, and the layer (14).

17. Method for the manufacture of an encapsulated chip, whereby

a conductive layer (14), serving to connect a chip (10), that is at least as high as the chip (10), is applied to a baseplate around an area intended for the chip (10),

on one side of a cover plate (16) one or more conductive surfaces (18) are arranged in such a way as to be able to form a connection between the chip (10) and the layer (14),

an anisotropically conductive film (26) is applied to the one side of the cover plate (16) over the conductive surface (18) or the conductive surfaces (18), respectively,

the chip (10) is positioned on the anisotropically conductive film (26) in such a way that its contact surfaces (20) are facing the cover plate (16),

the cover plate (16) is placed onto the baseplate (12) in such a way that the chip (10) comes to rest on the surface area intended for it, and a connection between the chip (10) and the layer (14) can be established, and

where the cover plate (16) is pressed, under the application of heat, onto the layer (14) so that the anisotropically conductive film (26) forms both a mechanical and an electrical connection between the contact surfaces (20) of the chip (10) and the conductive surface (18) or the conductive surfaces (18), respectively, of the cover plate (16), and where at the same time an electrical and a mechanical connection between the conductive surface (18) or the conductive surfaces (18), respectively, of the cover plate (16) and the layer (14) is established.

18. Method according to claim 17, where the simultaneous connection between the conductive surface (18) or the conductive surfaces (18), respectively, of the cover plate (16) and the layer (14) is achieved by means of a crimping process.

19. Method according to claim 18, where the simultaneous connection between the conductive surface (18) or the conductive surfaces (18), respectively, of the cover plate (16) and the layer (14) is achieved by means of a crimping process.

20. Method according to claim 17, where the simultaneous connection between the conductive surface (18) or the conductive surfaces (18) of the cover plate (16) and the layer (14) is established by means of an anisotropically conductive film.